

Cont.
Q1

-2-

- (1) the polyol is a particulate solid that has had its particle size reduced by mechanical size reduction to a particle size of less than about 100 microns;
- (2) the process is a continuous process in which the initial catalyst level is from about [0.001] 0.01 to about 0.5 mole of catalyst per mole of polyol;
- (3) the process is a continuous process in which the initial stage of the reaction contains soap emulsifier at a level of from about 0.001 to about 0.6 mole per mole of polyol;
- (4) after the degree of esterification is greater than about 60%, and the soap is insoluble in the reaction mixture, removing the soap by filtration or centrifugation in a continuous process;
- (5) unreacted polyol having particle sizes above about one micron is removed, before any soap that is present becomes insoluble, in a continuous process;
- (6) the molar ratio of the total ester reactant to each said esterifiable hydroxy group of said polyol in the reaction is from about 0.9:1 to about 1.2:1 [1.4:1];
- (7) the temperature in the initial stage of the reaction is from about 130°C to about 140°C, and in the final stages the temperature is from about 80°C to about 120°C [135°C];
- (8) said easily removable alcohol is a volatile alcohol, the pressure in the final stages of the reaction is maintained at from about 15 [5] to about 300 mm Hg and the removal of the volatile alcohol that results from the [interesterification] reaction is assisted by increasing the mass transfer area of the reaction mixture;
- (9) the initial stage of the reaction is carried out under conditions of backmixing to maintain a level of lower partial fatty acid esters of said polyol in an emulsifying amount;
- (10) at least the final stage of the reaction is carried out in a continuous manner under conditions approaching plug-flow conditions after the degree of esterification of said polyol is at least about 50%; and

Cont.
Q1

-3-

(11) [mixtures thereof] combinations of improvements (1) through (10).

Q2

7. (Amended) The process of Claim 1 which is a continuous process and wherein the initial level of soap emulsifier in the first stage of the reaction is from about 0.001 to about 0.6 mole per mole of polyol.

In Claim 12, please change "1.4:1" to --1.2:1--.

In Claim 16, after "carried out", please insert --in a continuous manner--.

In Claim 19, please change "1.4:1" to --1.2:1--.

In Claim 21, please change "135°C" to --120°C--.

Q3

22. (Amended) The process of Claim 21 wherein the removable alcohol is volatile [and] the pressure in the final stages of the reaction is maintained at from about 15 [5] to about 300 mm Hg and the removal of the volatile alcohol that results from the [interesterification] reaction is assisted by increasing the mass transfer area of the reaction mixture.

Q4

25. (Amended) The process of Claim 1 wherein the removable alcohol is volatile [and] the pressure in the final stages of the reaction is maintained at from about 15 [5] to about 300 mm Hg and the removal of the volatile alcohol that results from the [interesterification] reaction is assisted by increasing the mass transfer area of the reaction mixture.

Q5

29. (Amended) The process of Claim 1 wherein the temperature in the initial stage of the reaction is from about 130°C to about 140°C and in the final stages is from about 80°C to about 120°C [135°C], wherein the removable alcohol is volatile [and] the pressure in the final stages of the reaction is maintained at from about 15 [5] to about 300 mm Hg[,] and the removal of the volatile alcohol that results from the [interesterification] reaction is assisted by increasing the mass transfer area of the reaction mixture; and wherein the initial stage of

the reaction contains soap emulsifier at a level of from about 0.001 to about 0.6 mole per mole of polyol and the said initial stage is carried out under conditions of backmixing to maintain a level of lower partial fatty acid esters of said polyol in an emulsifying amount.

32. (Amended) The process of Claim 31 wherein said mass transfer area is increased by increasing the surface area of the reaction, [and/or] by sparging with an inert gas, or both.

33. (Amended) The process of Claim 29 wherein said mass transfer area is increased by increasing the surface area of the reactor [and/or], by sparging with an inert gas, or both.

In Claim 34, line 5, after "carried out", please insert --in a continuous manner--.

35. The process of Claim 34 wherein the temperature in the initial stage of the reaction is from about 130°C to about 140°C and in the final stages is from about 80°C to about [135°C] 120°C, wherein the removable alcohol is volatile [and], the pressure in the final stages of the reaction is maintained at from about [5] 15 to about 300 mm Hg[,] and the removal of the volatile alcohol that results from the [interesterification] reaction is assisted by increasing the mass transfer area of the reaction mixture; and wherein the initial stage of the reaction contains soap emulsifier at a level of from about 0.001 to about 0.6 mole per mole of polyol and the said initial stage is carried out under conditions of backmixing to maintain a level of lower partial fatty acid esters of said polyol in an emulsifying amount.

38. (Amended) The process of Claim 37 wherein said mass transfer area is increased by increasing the surface area of the reaction [and/or], by sparging with an inert gas, or both.

39. (Amended) The process of Claim 35 wherein said mass transfer area is increased by increasing the surface area of the reactor [and/or], by sparging with an inert gas, or both.

In Claim 42, please change "1.4:1" to --1.2:1--.

In Claim 43, please change "Claim 22" to --Claim 42--.

In Claim 48, line 2, after "carried out", please insert --in a continuous manner--.

Q11
52. (Amended) The process of Claim 1 wherein: the molar ratio of the total ester reactant to each said esterifiable hydroxy group of said polyol in the reaction is from about 0.9:1 to about [1.4:1] 1.2:1; the temperature in the initial stage of the reaction is from about 130°C to about 140°C, and in the final stages is from about 80°C to about 120°C [135°C]; and said easily removable alcohol is a volatile alcohol, the pressure in the final stages of the reaction is maintained at from about [5] 15 to about 300 mm Hg, and the removal of the volatile alcohol that results from the reaction is assisted by increasing the mass transfer area of the reaction mixture.

In Claim 53, line 2, please change "soup" to --soap-- and in line 4, please change "0.001" to --0.01-- and "0.6" to --0.5--.

In Claim 54, please change "Claim 1" to --Claim 14--.

Q12
56. (Amended) The process of Claim 1 wherein: the temperature in the initial stage of the reaction is from about 130°C to about 140°C and in the final stages is from about 80°C to about 120°C [135°C]; the removable alcohol is volatile [and], the pressure in the final stages of the reaction is maintained at from about [5] 15 to about 300 mm Hg[;] and the removal of the volatile alcohol that results from the [interesterification] reaction is assisted by increasing the mass transfer area of the reaction mixture; the initial stage of the reaction contains soap emulsifier at a level of from about 0.001 to about 0.6 mole per mole of polyol; said initial catalyst level is from about 0.01 to about 0.1 mole per mole of polyol; the molar ratio of said total ester reactant to each said esterifiable hydroxy group of said polyol is from about 0.9:1 to about 1.2:1 [1.4:1]; the polyol is sucrose having a particle size of less than about 100 microns; the unreacted sucrose is removed after the degree of esterification is at least about 15% and before the soap becomes insoluble; the said initial